Review Paper:

Dietary Primary Prevention of Allergic Disease: A Review

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ABSTRACT

Background: Allergic disorders are prevalent in the world affecting the quality of life. It imposes heavy burden on people and country. Primary prevention of allergic disease is important. The most prevalent allergic or atopic disorders include atopic dermatitis, asthma, allergic rhinitis, and food allergies.

Methods: The search was conducted among paper indexed in databases such as PubMed, Google Scholar, and Embase.

Results: There are three types of allergy prevention: 1. Primary prevention which prevents the initial immunologic sensitization (i.e. Immunoglobulin E (IgE) development specific to an allergen); 2. Secondary prevention which decreases the development of further disease after sensitization; and 3. Tertiary prevention which reduces disease symptoms after expression. Studies that support maternal avoidance allergenic foods during pregnancy, lactation, or both are not effective in preventing allergic disease. An infant is categorized as "high risk" for allergic disease when s/he has at least one first-degree relative (parent or sibling) with associated allergic disease. Based on recent studies, maternal avoidance of allergenic foods during pregnancy does not reduce the risk of allergic disease in children, regardless of whether the infant is at high risk or not. In contrary, some studies suggest that avoidance may actually increase the risk in offspring. In high-risk families for allergic disorders, exclusive breastfeeding and delayed introduction of solid foods up to 4-6 months is recommended, although, there is no clear evidence. If needed, we can use protein hydrolysate supplementation. IgA in human milk are generally protective against infant gut and avoid the development of food allergy. Serum levels of immunoglobulin G1 (IgG1) and immunoglobulin G4 (IgG4) in infants whose mothers avoid breastfeeding are lower, and these findings are associated with the development of milk allergy in infant. We found no evidence that vitamin D supplementation in pregnant or breastfeeding women who had no other indications for this vitamin can reduce the risk of developing allergic diseases in children and, hence, we suggest against this intervention. Recent studies do not suggest routine supplementation of mothers with vitamin D or omega-3 long-chain polyunsaturated fatty acids (n-3 LCPUFAs) during pregnancy or lactation for preventing allergic disease in offspring.

Conclusions: Restriction of mother's or child's diet is not beneficial when there is no any documented reason or unclear evidences. Exclusive breast-feeding may be benefit in prevention of allergy but not in all cases.

Keywords: Children, Maternal diet, Prevention, Allergenic disease